Index to Recent Literature Relating to American Botany.

A New Herbarium Pest. C. V. Riley. (Gard. and For. iv. 543, 544, fig. 84, 85).

An illustrated description of a new pest found in the herbarium of the Department of Agriculture, chiefly infesting plants from the southwestern part of the United States. It has been determined to be a new species of geometrid moth, under the name *Carphoxera ptelearia.*

Abies magnifica, var. *Shastensis.* (Gard. Chron. x. 430; f. 55)

Adiantum cuneatum. (Gard. xl. 360; illustrated).

Agave albicans. J. G. Baker. (Bot. Mag. t. 7207).

American Beech—The. (Am. Gard. xii. 742, 743; illustrated).

An account and full page plate of *Fagus ferruginea.*

American Buckeyes—The. (Gard. and For. iv. 517, 518, fig. 81).

Contains a representation of *Æsculus Californica.*

Annual Report of the State Botanist. Chas. H. Peck. (From 44th Ann. Rept. N. Y. State Museum Nat. Hist., Albany, Jan. 31st, 1891; pl. i-iv).

In the list of additions to the State Herbarium here noted are thirty-six species of fungi described as new, of which the following are figured: *Armillaria viscidipes, Crepidotus distans. Omphalia corticola, Pleurotus campanulatus, Saccharomyces Betulæ, Cortinarius albidus, Tricholoma grande, Ramularia graminicola, R. destruens, Cercosporella Veratri, Aspergillus aviarius, Septomyxa Carpini, Bispora effusa, Caryospora minor* and *Phyllosticta Lndwigiæ.*

Polypodium vulgare, L., var. *cristatum,* Lowe, is described and figured from specimens collected in Dutchess County.

The genus *Tricholoma* is made the subject of a monograph, and forty-eight species from New York are collected.

A list of the fleshy-fungi of Maryland, by Miss Mary E. Banning, is included. It numbers one hundred and seventy-nine species, of which fourteen are described as new. The manuscript, accompanied by one hundred and seventy–five colored plates, has been donated to the New York State Museum, where they have been bound in one large volume for safe keeping and preservation. The botanists of New York should certainly feel proud of this mark of appreciation from one outside the State,

and it ought to stimulate them to at least show equal zeal and interest in adding to the value and scope of the State Herbarium.

A. H.

Aster cordifolius. C. W. Dod. (Gard. xl. 337; illustrated).

Berberis aquifolium. (Gard. xl. 383, 384; illustrated).

California Wild-Flower Notes. K. P. S. Boyd. (Am. Gard. xii. 737, 738; illustrated).

Contains cuts representing *Abromia umbellata, Mimulus cardinalis, M. luteus,* and *M. glutinosus.*

Callirhoë Papaver. (Gard. xl. 541, with colored plate).

Calandrinia oppositifolia. (Gard. xl. 485; illustrated).

Catalogue of Flowering Plants and Ferns of Santa Cruz County, California. F. L. Clarke. (Pamph. pp. 13, Santa Cruz, Calif).

This list was compiled from specimens collected by the pupils in the public schools of Santa Cruz County, as a result of the "Wild Flower Contest," inaugurated by the *Santa Cruz Surf.* Additions to the list were made by Dr. C. L. Anderson, and the modest wish is expressed that the work may serve as a nucleus to which many additions may be made in the future.

Cereus procumbens. (Bot. Mag. t. 7205).

Colors of Flowers.—I. II. E. W. Hervey. (Gard. and For. iv. 568-570; 578-580).

The author seeks to show that nature begins in all colored flowers by a change from green to white, and thence to the brighter colors,—that this the line of the evolution of colors. In other words, that chlorophyl is first eliminated from the specialized leaves and a white subject prepared on which the more diverse colors can be painted. The other colors, the author concludes, do not follow each other in any sequence, but may spring directly from the white and are of equal rank. The examples given and the course of reasoning employed are interesting, to say the least.

Colors of Leaves. E. W. Hervey. (Gard. and For. iv. 591, 592).

This is a sequel to the author's previous article on the colors of flowers. The course of reasoning is similar, and the question asked is whether the green color of leaves is the original color, or is it secondary. The conclusion is reached that our green vegeta-

tion has been derived from white. The well-known fact is quoted that the cotyledons or embryo leaves of all plants are almost uniformly white, and this is considered significant. Both articles are suggestive, and offer unlimited field for the imagination.

Cucurbitacearum Novum Genus et Species. A. Cogniaux. (Proc. Calif. Acad. Sci. iii. 58-60).

Brandegea with two species, *Bigelovii* and *monosperma*, is described as new. Also *Echinocystis Brandegei.*

Couroupita Guianensis. W. E. Broadway. (Gard. Chron. x. 649, 650, f. 94).

Diatoms: Their Life-History and their Classification. Frederick B. Carter. (Am. Month. Mic. Journ. xi. 276-280; xii, 1-6; 81-85; 97-101; 121-123, pl. I, II).

That portion of this series of papers which relates to the structure and life-history of the diatomaceæ is very interesting, and may be read with profit by those who are making a study of these minute organisms. The discussion of the structure of the diatom frustule is particularly readable, considerable space being devoted to showing the confusion which has arisen from the use of the word *hoop* to designate what William Smith calls the *connecting zone*, i. e., that portion of the frustule which is seen in front view. By the by, Count Castracane aptly speaks of this view as the *zonal view*, a term which is more expressive than *front view*, and which, for that reason, should come into general use.

In treating this part of the subject, the writer surely nods a little, however. On page 84, in his remarks in reference to *Fragilaria*, he appears to have fallen into the error of supposing that all diatoms have the "pill-box" structure. But Prof. H. L. Smith, whom the writer quotes, distinctly mentions *Fragilaria* as one of the genera in which the edges of the hoops are simply opposed instead of sliding one over the other. (Lens, vol. 1, p. 72). In such a case, one would certainly not expect to find a diminution in the breath of the filaments.

A valuable part of the paper is that which discusses the range which must be allowed in the size of the frustules. It is undoubtedly the case that too frequently difference in size has been almost the only reason for constituting a new species.

In a paper of this character, intended to guide observers in the determination of genera, it is sincerely to be regretted that the author did not follow the classification of Prof. H. L. Smith, now so generally accepted. A number of the generic names mentioned are so ancient that their use is likely to create confusion.

The division into fresh water and marine genera is not at all a happy one. Of the thirty-four genera enumerated on page 98 as fresh water, eleven are also marine, while two others,—*Terpsinoë* and *Schizonema*—are exclusively marine. Nearly all the species of *Pleurosigma*, also, are either m arine or brackish. As *Navicula*, *Surirella*, *Campylodiscus*, *Synedra*, *Melosira*, *Nitzschia*, *Cocconeis* and *Achnanthes* are given among the fresh water and omitted from the marine genera, it is evident that the author ranks these as exclusively fresh-water forms. This is quite incorrect, as the number of marine species belonging to the genera named is, in most of them, even more numerous than the fresh-water species. Some of the most interesting forms commonly found in marine collections, are conspicuously absent from the list of marine genera, as, for instance, *Coscinodiscus*, *Amphiprora*, *Actinoptychus* and *Actinocyclus*. It is true that three of these are mentioned in the list of fossil forms, but then it is not made clear that the list of fossil forms given represents a marine deposit. Surely the writer must be aware of the fact that there are fresh water as well as marine deposits.

While the descriptions of genera were not intended to be minutely accurate, yet some of them are so loose as to be misleading. For instance, in telling how to distinguish *Campylodiscus*, *Surirella* and *Cymatopleura*, the statement is made that if the frustule is twisted the specimen is a *Campylodiscus*. This would sadly puzzle a beginner, for *Surirella* and *Cymatopleura* are also frequently twisted. The word "twisted" has been used to describe the shape of a *Campylodiscus*, but, to most minds, the old term "saddle-shaped" would be more expressive.

Perhaps it may not be amiss to add in conclusion that there is certainly no better guide to the determination of genera than is given in the "Conspectus of the Diatomaceæ," by Prof. H. L. Smith, first published in "The Lens," in 1872, but lately reprinted by Dr. Wolle in his work on *The Diatomaceæ of North America*.

C. H. K.

Directions for Collecting Recent and Fossil Plants. F. H. Knowlton. (Part B. Bull. 39, U. S. Nat. Mus. Pamph. pp. 46, illustrated, Wash. D. C., 1891).

Erythrina crista-galli. (Gard. xl. 516, with colored plate).

Flora of the Cape Region of Baja California. T. S. Brandegee. (Proc. Calif. Acad. Sci. iii. 108-182 ; also reprinted).

This work is the result of two trips made by the author during the autumn of 1890. The list includes six hundred and seventy-nine species and varieties, of which about thirty are fully described as new and some twenty-five more listed as such, but not described.

Filices Mexicanæ.—III, IV. (Gard. and For. iv. 519, 520, fig. 80., 555, 556, f. 88.)

Contains description and figure of *Notholæna rigida* n. sp. and *Pellæa Pringlei* n. sp.

Forest Vegetation of the Upper Mississippi.—III. (Gard. and For. iv. 531, 532).

Helenium autumnale. (Gard. Chron. x. f. 56).

Helenium autumnale. (Am. Gard. xii. 683, illustrated).

Hypericum Buckleyi. (Gard. and For. iv. 581, fig. 91).

Index to Economic Products of the Vegetable Kingdom in Jamaica.

This is a list of the plants most deserving attention for their medicinal properties or economic products. One hundred and thirty-eight are native to Jamaica and ninety-four naturalized or cultivated. The habitat of each plant, as well as its properties and uses, are given, but nothing is said of its value or importance, present or prospective on the island. Twenty-three of the species are also indigenous to the United States, from common plants like *Erigeron Canadense* and *Lycopodium clavatum* to subtropical trees like *Prosopis juliflora*, *Rhizophora Mangle* and *Carica Papaya.* The presence here of *Prosopis juliflora* (Mezquite) brings to the mind its wide dissemination in the new world, from California to the mouth of the Rio Grande, and from Colorado, through Mexico, to Panama, Nicaragua, Chili, Buenos Ayres and the West Indies. In Jamaica this tree is common and the wood largely used.

Besides the ordinary garden vegetables, which are not included, at least sixty more of the plants enumerated are cultivated or

susceptible of cultivation in our Southern States, such as *Arachis hypogœa, Camellia theifera, Chrysobalanus Icaco, Ananas sativa,* and species of *Citrus, Anona, Musa, Eucalyptus, Opuntia, Agave,* &c.

Jamaica, the largest and most important of the British Islands in the West Indies, has been especially favored by nature; high mountains, rising in several places to an altitude of nearly 8,000 feet, diversify its surface and materially affect the temperature and rain-fall of its different parts; many rivers spring from the foot-hills and water fertile lowlands. The climate and soil vary so much as to permit the culture of most plants from the northern temperate regions as well as those from the topics; thus, while the cinchona tree and coca are cultivated in the mountains, the coffee in the foot-hills and the cocoa on the coast lands, special attention is also being turned to the raising of garden vegetables with a view to supply the markets of the United States during the winter and spring.

The great staple of the island is still sugar-cane; coffee perhaps ranks next in importance. Cotton and maize are also generally cultivated. The most conspicuous and useful native trees are: *Swietenia Mahagoni* (mahogany), *Brosimum alicastrum* (bread-nut), *Eriodendron anfractuosum* (silk-cotton tree), *Dipholis montana* (mountain bully tree), *D. nigra* (black bully tree), *Sapota Sideroxylon* (naseberry bullet tree), *Sloanea Jamaicencis* (green-heart), *Amyris balsamifera* (rosewood), *Vitex umbrosa* (fiddle wood), *Laplacea Hœmatoxylon* (iron wood). Of the species of cinchona under cultivation, *C. Ledgeriana,* Mœns. is the most promising from the vigor of its growth and the large percentage of quinine in its bark. The Liberian coffee (*Coffea Liberica*) is also looked upon with growing favor. V. HAVARD.

Late Persisting Leaves on Trees. J. G. Jack. (Gard and For. iv. 567, 578).

Notes in regard to this subject are given for *Magnolia glauca, Quercus alba, Q. coccinea, Q. tinctoria, Q. rubra, Ulmus campestris, Juglans* sp., *Hicoria* sp., *Fagus* sp.

Lepachys columnaris. (Meehan's Month, i. 65, 66, Pl. 5).

Les Plantes Européennes introduites dans la Vallée du Minnesota. Conway MacMillan. (Rev. Gen. de Bot. iii. 289).

The phanerogamous plants of Minnesota number some thirteen hundred, nearly a third of which are of European origin. Prof. MacMillan gives a list of these according to their geographical distribution in the State, and indicates their course in penetrating into the interior.

Manzanita—The. (Gard. and For. iv. 565, 566, fig. 90).

Illustrated description of *Arctostaphylos Manzanita.*

Moonworts—The Exiled. G. A. Woolson. (Am. Gard. xii. 722-724).

A popular account of our common species of *Botrychium* and the legends and superstitions connected with them.

New California Carices. L. H. Bailey. (Proc. Calif. Acad. Sci. iii. 104-106).

Carex obnupta, C. quadrifida, C. quadrifida, var. *lenis, C. monile*, Tuckm. var. *Pacifica*, are described as new.

Notes on the Distribution of some Kansas Trees, III.—The Oaks. S. C. Mason. (Gard. and For. iv. 508-510)

Notes on *Quercus macrocarpa, Q. prinoides, Q. Muhlenbergii, Q. nigra, Q. tinctoria, Q. rubra and Ostrya Virginica.*

Notes on the Flora of Nova Scotia—Part I. Geo. Lawson. (Reprint, Trans. Nova Scotian Inst. Sci. Session of 1890-91, pp. 84-110).

This part includes from Ranunculaceæ to Anacardiaceæ. The author lays particular stress upon the fact that the work is to be considered as only preliminary, and that corrections and additions will be thankfully received. The notes are full, and the list when completed will be one of great value.

Our Native Nelumbo. (Gard. and For. iv. 556, fig. 87).

Illustrated description of *Nelumbo luteum* as it appears in a pond in Southern Illinois.

Pines, Hemlocks and Spruces. L. H. Bailey. (Am. Gard. xii. 646-648; illustrated).

Pinus resinosa, P. Strobus and *Abies Canadensis* are figured.

Pinguicula lutea. (Bot. Mag. t. 7,203).

Possibilities of Our Native Grapes (*concluded*). T. V. Munson. (Am. Gard. xii. 659-661).

The author concludes his account of what has been done in cultivating and hybridizing the native species of *Vitis.* It is a

contribution of great interest, and one which we venture to say will cause surprise to almost every one who has not made a special study of the subject.

Polygala in North America—The Genus. Wm. E. Wheelock. (Mem. Torr. Bot. Club, ii. No. 4, pp. 109-152).

This paper completes Vol. II of our "Memoirs." There has been no monograph of the North American *Polygalas* since their treatment in Torrey and Gray's Flora of North America in 1838-1840. Dr. Wheelock has studied the specimens contained in the larger American herbaria, and Dr. Britton has examined most of the types contained in European collections and has supplied notes thereon. Thirty-eight species are recognized. *P. Reynoldsiæ*, Chapm., is not regarded as distinct from *P. Rugelii*, Shutt.; *P. ambigua*, Nutt., is maintained as a species rather than a variety of *P. verticillata; P. viridescens*, L. is the name accepted for *P. sanguinea*, L., having priority of place on the page of the Species Plantarum, these two Linnæan species being identical; *P. Mariana*, Mill (1768) replaces *P. fastigiata*, Nutt. (1818); *P. Lindheimeri*, A. Gray, var. *parvifolia*, is a new variety from Arizona; *P. Tweedyi*, Britton, is a new species from Texas.

In spite of the most careful proof correction, two vexatious errors have occurred in the paper. On page 146, under *P. cucullata*, *P. Californica*, Nutt. is the name meant to be used as the date of it (1840) as against that of *P. cucullata*, Benth (1849), indicates, and on page 149 *P. ovatifolia*, DC., is uniformly spelled *P. ovalifolia*, DC.

Rose Acacia—The Large-Flowered. (Am. Gard. xii. 739, 740, illustrated).

Contains a figure of *Robinia hispida*.

Rosa Carolina. (Meehan's Month. i. 84, illustrated).

Sarracenia purpurea. (Meehan's Month. i. 81, 82, Pl. 6).

Sisal Hemp in the Bahamas and Florida. (Bull. No. 24, Bot. Dept. Jamaica, 10-15).

Some Strange Names among Indigenous and Other Drugs. (Pharm. Rec. xii. 377).

The following popular names are noted: "Coquetta" or "Bogota Bark" for *Cinchona condaminea;* "Cammock" for *Ono-*

nis spinosa; "Ginger Grass" for *Andropogon schoenanthus;* "Vermont" or "Canada Snakeroot" for *Asarum Canadense,* "Beerlap" for *Lycopodium* sp.

Struggle for Life in the Guianian Forest—The. Jas. Rodway. (Gard. Chron. x. 578, 579; 612, 613).

Mostly concerned with the orchid flora of the region.

The Action of Bacteria on the Rapid Souring of Milk during Thunder Storms. A. L. Treadwell. (Am. Nat. xxv. 1010-1012).

From experiments with milk and electrical discharges the author finds a slight hastening in the time of souring. If the milk is first sterilized, however, no souring is obtained. The conclusion is reached that the souring is not due to oxidation but to the more rapid growth of bacteria under the influence of the free oxygen or ozone generated by the electrical discharges. The small amount of ozone generated during a thunder storm is not considered sufficient to have any appreciable oxidizing effect either, and if rapid souring is produced it is to be attributed to the more rapid growth of bacteria in the sultry atmosphere.

The Specific Name of the Texan Cercis. E. L. Greene. (Gard. and For. iv. 562, 563).

Tillandsia argentea. (Gard. xl. 524, illustrated).

Water Garden—A Typical. (Gard. xl. 533, 534, illustrated).

Contains a picture of a nook in the garden of Mr. John Gerard at Elizabeth, N. J.

Proceedings of the Club.

MEETING OF DECEMBER 8TH, 1891.

The President in the chair and forty-two persons present.

The subject of the evening, "The Flora of the Higher Catskills," was illustrated by lantern slides, made and shown by Mr. Van Brunt, further supplemented by herbarium specimens.

Miss Anna Murray Vail followed with a paper on the plants collected by her in the region of Onteora during the summer jus passed, and Miss Steele gave a short account of the flora in the neighborhood of Slide Mountain, illustrated by specimens of the rarer ferns and mosses.

Dr. Rusby announced that the prize of fifteen dollars offered